

Application No.: 10/020,826  
Amendment dated: July 24, 2003  
Reply to Office Action of April 24, 2003

### REMARKS

The Examiner has summarized the restriction of the claims and election of claims 1-7 and 20 (Invention I) with traverse. The Applicants affirm the election and also the traverse of the restriction. In support of the restriction, the Examiner identified claims 8-19 (Invention II) as drawn to a method for making a composite board and then stated that Inventions I and II are distinct because the product as claimed can be made by another and materially different process such as one that sandwiches a preform of the reinforced foam core between the two facer sheets so as to eliminate the curing step of the polymer foam.

The Applicants note that two methods have been provided: claims 8-13, directed toward a method of re-roofing a roof and, claims 14-19, directed toward a method of making a composite board. The Examiner's distinction between Inventions I and II is not applicable to claims 8-13 and the Applicants contend that to determine the patentability thereof, one must also consider the patentability of the product claims, 1-7. Accordingly, reconsideration of the restriction is requested and the Applicants will argue the patentability of claims 1-7 and 8-13. Dependent claim 20, has also been grouped with Invention I; however because it depends from claim 14 (Invention II) and non-elected, the Applicants tentatively agree to withdraw it, upon notification from the Examiner that it is to be considered as part of Invention II - - the method of making a composite board.

The Examiner has objected to the specification for failing to provide proper antecedent basis for claim 20, which he contends provides the structure in the order: facer/filled foam core/facer/substrate material. The specification does not support that structure and to overcome the objection, claim 20 has been amended, so that the application of a substrate material is in lieu of a facer material.

Claim 6 has been rejected under 35 U.S.C. §112, second paragraph as indefinite in the recitation "said lower surface" in line 2. Accordingly claim 6 has been amended to recite "other" instead of "lower". The Applicants respectfully request withdrawal of this rejection.

Claims 1, 3 and 7 have been rejected under 35 U.S.C. §102(b) as anticipated by Frisch et al. (5,901,436). The Examiner contends that Frisch anticipates by reaching a composite board comprising a reinforced foam core sandwiched between two skins. Frisch also

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is said to teach the use of reinforcing materials made of continuous fiberglass strands and skins of fiberglass strands or yarn. The Examiner correctly notes that the nature of the Applicants' facer material and substrate material are not recited in claims 1, 3 and 7.

The Applicants respectfully disagree. Frisch provides in Example 1 a composite of a polyurethane foam that contains chopped fiberglass. However, the overall product has both of its opposed main surface layers reinforced by continuous strands of fiberglass (element 22 in Fig. 2) and furthermore, layers of fiberglass mat (element 24 in Fig. 2) are interposed between the foam (28) and fiberglass strands (22). The only similarity to the Applicants' product is use of fiberglass a reinforcing filler in the foam layer, although the Applicants employ a homogeneous mixture of fiberglass throughout the foam. The Applicants' composite board has one or two opposed facers upon the opposed surfaces; however, neither facer is comprised of continuous strands of fiberglass or a fiberglass mat. There is no suggestion of the use of Frisch's composite as a recovery board; nor, would it be useful in this environment. Frisch calls for polyurethane densities between of between 20 and 100 pounds per square foot, while the Applicants typically employ foam having densities of less than 20. More importantly, there is no suggestion in Frisch of eliminating the fiberglass components, 22 and 24 of his composite, to form a recovery board, as the Applicants teach.

In addition to these differences, dependent claims 3 and 4 have been incorporated into claim 1. Accordingly, claim 1 is believed to be patentable over Frisch and the Applicants respectfully request withdrawal of this rejection.

Claims 1 and 3-7 have been rejected under 35 U.S.C. §102(b) as anticipated by Collins et al. (5,846,461), which teaches a carper padding comprising a lower polyurethane foam layer, having a filler of ground vehicle tires, and a polyurethane foam upper layer. The upper and lower layers are surrounded by and bonded to upper and lower polyurethane sheets (Fig. 7) and polyethylene liners on either side of the foam.

The Applicants disagree. Their product is a recovery board or insulation board for use on a roof and which must be able to stand up to roof traffic, that is, personnel walking over the boards and roof in conjunction with normal rooftop maintenance operations. Collins is directed toward carper padding which would be totally unsuitable as a recovery board. Carper padding must be soft, comfortable and resilient underfoot. It yields, crushes and then

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expands, providing a soft cushion underlay for the overlying carpet. To provide these properties, Collins requires a flexible polyurethane foam -- "[s]till another classification of such foams is that of rigid or flexible foams, the former showing resistance to deformation with the latter showing flexibility and resiliency." (Column 4, lines 25-28). The foam in the Applicants' product is necessarily rigid foam, not flexible.

Collins also uses a much finer ground rubber particle, which is disclosed as in the range of 30 to 40 mesh, and provides too great a surface area for use in the Applicants' recovery boards. Another difference is that Collins' product results from the application or deposit of an uncured polymeric foam onto a previously cured layer of polyurethane foam. The Applicants' product does not have this construction; it has a single homogeneous foam layer with one or two opposed facers applied to opposed surfaces. Accordingly, claim 1 as amended, is also patentably distinct over Collins and the Applicants respectfully request withdrawal of this rejection.

Claim 2 has been rejected under 35 U.S.C. §103(a) as obvious over Collins in view of Ghobary et al. (6,395,796). The Examiner notes that Collins is silent as to the iso index of polyisocyanurate, and that Ghobary teaches a polyisocyanurate rigid foam at indices of 250-400, meeting the range of claim 2. The Examiner further argues that "it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the polyisocyanurate foam having an iso index within the range instantly claimed, motivated by the desire to successfully practice the invention of Collins. Such an iso index is also taught by the prior art to produce a rigid foam which is important to the invention of Collins, thus further suggesting the modification."

The Applicants traverse this rejection on several grounds. First, Ghobary is directed toward a process for producing polyurethane foams, whether rigid or flexible. Second, it is flexible foam, not rigid, that is suitable for carpet padding. "Some of the uses of flexible slabstock polyurethane foams include: furniture cushions, bedding and carpet industry." (Column 3, lines 23-25). Third, there is no motivation in Ghobary to employ the Applicants' high iso index foams for the successful practice of the Collins invention. A rigid foam is not important to the invention of Collins. Ghobary does agree that "[S]ome examples of polyisocyanurate rigid foams are produced at indices as high as 250-400." (Column 10, lines

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8-10). However, Collins requires a flexible foam and not a rigid foam, as noted above. "Still another classification of such foams is that of rigid or flexible foams, the former showing resistance to deformation with the latter showing flexibility and resiliency." (Column 4, lines 25-28).

Thus, one seeking to modify Collins would not do so by producing a rigid foam and so, the combination of Ghobary with Collins is not applicable and is improper. Collins may not be modified with Ghobary where the result would be to produce an unsuitable product. In the instance created by the rejection, a rigid carpet pad would result, which is contrary to the resilient, flexible, cushioning properties necessary for carpet padding. Moreover, as previously noted, carpet padding, by its very nature, is unsuitable material as a recovery board. Accordingly, the Applicants contend that their invention is not obvious in view of Collins and Ghobary and the Examiner is respectfully requested to withdraw this rejection.

Finally, claims 1-7 and 20 have been rejected under 35 U.S.C. §103(a) as obvious over Clayton et al. (5,735,092) in view of Hunter, Jr. (6,024,147). Clayton allegedly teaches a composite roofing member including a foam core, a facer applied to one surface of the core and gypsum board, applied to the opposite surface. While Clayton is silent as to a foam core being reinforced with a filler material, Hunter teaches reinforcing foam roofing by the use of a reinforcing fiberglass.

The Applicants' product is a single unitary board of standard dimension e.g., 4' X 8', to accommodate both installation and re-installation. Hunter teaches a method for spraying foam onto an entire roof. As such, it is not possible to remove a damaged section; rather a damaged area would need to be cut out and replaced, possibly with one or more recovery boards, such as described by the Applicants. Hunter also discloses at column 8 spraying the foaming mixture over reinforcing fabric, such as fiberglass, which becomes embedded in the foam as it rises. This is not the procedure employed by the Applicants.

Although method claims 14-19 are non-elected, they and the supporting specification describe foaming a mixture, such as polyurethane and scrap filler materials between two conveyor belts, with or without facer materials or a supporting substrate material. Foaming the polyurethane over a fiberglass fabric, in the manner taught by Hunter, would be applicable if the Applicants' composite board was produced by applying the foam core over a

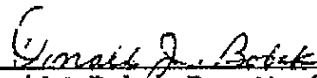
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fiberglass facer or substrate. However, the Applicants do not employ a fiberglass fabric as a facer or as the substrate and, the Applicants' product does not comprise foam applied over a fiberglass fabric. Accordingly, the Applicants contend that their invention is not obvious over Clayton in view of Hunter and the Examiner is respectfully requested to withdraw this rejection.

In conclusion, the Applicants believe that claim 1, as amended, is patentable over the art of record. Method claim 8 contains similar amendments, as claim 1 and is likewise deemed to be allowable. As noted above, claim 8 is not directed to manufacture of composite board but instead, a method of re-roofing using novel boards. On this basis the Applicants also request that the Examiner reconsider Invention I to include claims 8 and 11-13.

Additionally, two new dependent claims, 21-22 have been added, dependent from claims 5 and 11 and recite the materials from which the second facer can be selected, the same materials as for the first facer material. With cancellation of non-elected claims 14-19, the remaining claims do not exceed the number of claims originally filed, and the Applicants earnestly solicit a Notice of Allowance of claims 1, 2, 5-8, 11-13, 21 and 22. In the event the Examiner would care to discuss any of the foregoing, the undersigned attorney would welcome a telephone call.

Respectfully submitted,



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